

nitrites, nitrates, perchlorates, carbonates, silicates, sulphites, sulphates, polythionates, borates, phosphites, and phosphates, and, of course, the groups analogous to each of those mentioned; the sulphates, with their companion compounds, fill more than a third of the volume. A complete index giving the chemical and mineral names is appended. G. F. H. S.

#### NATURAL HISTORY OF TIERRA DEL FUEGO.

*The Birds of Tierra del Fuego.* By Richard Crawshay. Pp. xl+158; illustrated. (London: Bernard Quaritch, 1907.) Price 3l. 13s. 6d. net.

IT was by accident and not by design that Mr. Crawshay visited Tierra del Fuego, and, spending six months there, has been able to give us this sumptuous natural history of a little-known land. His book was badly wanted, for the author is probably right when he doubts "if there is another land on earth concerning which more misconception prevails." From the description given it does not seem a very pleasant place to live in.

"It commonly freezes at midsummer. . . . There is the wind from the everlasting snows and glaciers, always blowing with terrific force and with cutting keenness, yet how invigorating and fragrant with forest and peat and seaweed."

Yet the author expresses himself fascinated by the country, and while allowing that it is no place for weaklings and for those who cling to luxury, he claims that, however rigorous the climate is, it is healthy. This seems to have been its character always, for Sir John Narborough is quoted as writing in 1670, "A man hath an excellent stomach here. I can eat foxes and kites as savourily as if it were mutton. Nothing comes amiss to our stomachs." This is saying a good deal.

Although the title of this fine volume would lead one to expect only an account of the birds, we referred to it just now advisedly as a natural history of the country. For the "preface" (which might perhaps have been more properly the "introduction") contains an excellent and most interesting account of the physical conditions of this remote spot, including the geology, botany (the flora is very much more extensive than might be imagined), the mammals (including the native races of man), fishes, insects, crustaceans, molluscs, &c. There appears to be only one reptile—a little green lizard—and no amphibian.

The birds dealt with in this work do not claim to represent every species occurring in Tierra del Fuego; but they are, the author believes, the most comprehensive collection yet made in the island, and include many recorded from there for the first time. Seventy-nine species are enumerated in the classified list or "index." The orders most numerously represented by species are Passeres, Limicolæ and Anseres. Psittaci and Pici are represented only by a single species. The woodpecker—a splendid scarlet-headed bird—does not seem to be common. The existence of a parrot in these high latitudes as reported by the early voyagers was for a long time discredited. It is common in flocks in the more open portions of the

forest to the south of Useless Bay, but seems to be local and difficult to find. The majority of the species are, however, only summer visitors, and some of these we remember as winter visitors to Uruguay. Five species of goose visit the country or are resident therein, some of which "could hardly be numbered in figures short of millions." An account is naturally to be found of the race horse, loggerhead, or steamer duck, which has constituted one of the wonders of these waters from the time of the earliest navigators, and has been the subject of much controversy.

So little has been observed of the birds of Tierra del Fuego in the country that it was at first surprising to see so large a book on the subject. But the author has quoted very extensively from the writings of Azara, D'Orbigny, Darwin, Gould, and other voyagers and naturalists, although for the most part their accounts of the species treated of relate to other parts of South America and even more distant parts of the world. For instance, although the cosmopolitan barn owl is only doubtfully included, nearly six pages are devoted to it, and the article includes Waterton's well-known account of it in Yorkshire. In this way the author has given his readers a fairly complete and always interesting account of the birds on his list, a fact that will be much appreciated by those interested in birds and living in those remote regions into whose hands the book may by good fortune come.

The volume is well illustrated by twenty-one coloured plates of birds by Mr. Keulemans, and twenty-three plates of scenery and bird haunts, also a map.

#### OUR BOOK SHELF.

*Handbook for Egypt and the Sudan.* Edited by H. R. Hall. Eleventh edition, revised, largely re-written and augmented. Pp. xiv+613; with 58 maps and plans. (London: Edward Stanford, 1907.) Price 14s.

THE first edition of this work—"Murray's Egypt"—appeared so far back as 1847, and was a reprint of Sir Gardner Wilkinson's earlier book, "Modern Egypt and Thebes," which had been revised by that great pioneer in Egyptian studies so as to meet, so far as possible, the requirements of a guide-book. From time to time since 1847 additions were made to the original edition, and in 1873, and again in 1880, it was thoroughly re-cast by the Rev. Greville Chester, the Rev. W. J. Loftie, Mr. Mitchell, and Mr. Phéné Spiers, the latter of whom contributed many new architectural plans. Then followed the editions of 1896 and 1900, edited and revised by Miss Mary Brodrick, with the help of Prof. Sayce and Capt. H. G. Lyons, the director of the Geological and Land Surveys of Egypt. Unfortunately, these last two editions—the ninth and tenth—contained numerous errors and were far from satisfactory, so it is now a pleasure to be able to record the appearance of a new edition, under the editorship of Mr. H. R. Hall, which fully maintains the high standard of Wilkinson's original "Handbook for Travellers in Egypt."

Mr. Hall has thoroughly revised the archaeological part of the work. The old division into two parts has been abolished. Many paragraphs have been with advantage deleted and new ones inserted. Several sections have been re-arranged and re-cast, while

some—those on Cairo and Thebes, for instance—have been almost entirely re-written. A new section, necessitated by the opening up to tourists of the Upper Nile, deals with the Anglo-Egyptian Sudan, and thus we have, within the compass of a handy volume of 600 odd pages and a plentiful supply of maps and plans, a guide-book which will carry the traveller from Alexandria or Port Said to the frontier of Abyssinia and to the Uganda Railway and Mombasa. In a pocket of the cover Mr. Hall has added a small booklet of 35 pages of "Notes on the Arabic Language, with a Vocabulary of Words and Phrases," which ought to prove of much use to the amateur traveller.

In reading through the handbook we find that Mr. Hall has done the work on the archæological side most admirably, and there is little that he has added to the book which we should feel inclined to dispute. In his transliteration of the Egyptian hieroglyphs, however, we are sorry to note that he has adopted the unscholarly *tch* or *tj* for the serpent hieroglyph which, by English and German Egyptologists, is always rendered by *z* or *d*. In any future edition of the handbook that may be issued, we hope the publishers will see that the section on geology is brought up to date, for in the edition before us no mention is made of Dr. Andrews' or Dr. Beadnell's recent discoveries in the Fayum, nor can we find any mention of the new Geological Museum, with its fine collection of fossils and minerals, now housed in a building in the garden of the Ministry of Public Works.

*Index Kewensis Plantarum Phanerogamarum.* Supplementum tertium nomina et synonyma omnium generum et specierum ab initio anni MDCCCCI usque ad finem anni MDCCCVC complectens. Ductu et consilio D. Prain confecerunt herbarii horti regii botanici Kewensis curatores. Pp. iii+193. (Oxford: Clarendon Press, 1908.) Price 28s. net.

WORKERS everywhere in systematic botany will welcome the appearance of this, the third, supplement of the Kew Index. We now have a register of the generic and specific names of seed-plants up to and including the year 1905—a boon to workers which only those can adequately appreciate who remember the period when there was no Kew Index. The supplement follows closely the plan of the original work—would that those concerned could be persuaded to make one small but valuable improvement! namely, the inclusion of the date of publication in all the references to the original descriptions, as is now done only in the case of periodicals.

The Index and its previously issued supplements are so well known and so generally used that a notice resolves itself into a few remarks and more or less petty criticisms. Thus we note that a fair number of genera are recognised which in the Index or its earlier supplements were regarded as synonyms; in these cases the genus-name formerly accepted is added in brackets followed by the letters I.K. Similar quotations, followed by the letters D.T. & H., look more mysterious, though, presumably, the valuable reference-list of genera by Dalla Torre and Harms will occur to most on reflection. In the absence of explanatory notes, it is not always easy to understand the reasons adopted for the recognition of some genera and not of others; why, for instance, is *Limonium* still relegated to synonymy as equivalent to *Statice*, Linn.? Linnæus included under *Statice* the sea-lavenders, for which the name has until recent years been generally retained, as well as our sea-pink (*Armeria*). But Miller in 1759 followed Tournefort in keeping the name *Limonium* for the sea-lavenders and regarding

the sea-pink as a distinct genus, *Statice*, and it is generally agreed that the two genera are distinct. It is, of course, unfortunate that *Statice* should have been used so long for *Limonium*; Messrs. Groves, however, in the recent edition of Babington's manual, have accepted the original position, which is therefore no longer strange to British botanists. *Limonium*, by the way, is cited as of Tournefort, who established the genus before 1753, which is now taken as the starting point of botanical nomenclature; the genus should be credited to Miller (1759). Again, four species of *Crassocephalum*, described by S. Moore, are referred to *Gynura*; this reference may be justifiable, but it would be useful to know what standard has been adopted, especially in cases where there is no recent monograph of the family to which the genus belongs.

The supplement forms an interesting review of progress in systematic botany in the first five years of the present century, and is a tribute to the energy and devotion of botanists engaged in this branch of the science.

A. B. R.

*Die Metamorphose der Insekten.* By Dr. P. Deegener. Pp. 56. (Leipzig and Berlin: B. G. Teubner, 1909.) Price 2 marks.

THIS is an exceedingly elaborate discussion of the nature of the various processes involved in the transformations of insects. We should have preferred to see it in larger book-form, with headings and text-illustrations; but reference to the subjects discussed is facilitated by a table of contents prefixed to the work. The chief problems are, of course, presented by insects with complete metamorphoses, in which most of the larval structures are entirely dissipated during the pupa-state, and new ones formed for the use of the imago, whereas in the case of insects with incomplete metamorphoses the organs of the larva are gradually modified into those of the imago. It may be useful to condense Dr. Deegener's classification of larval organs:—

(1) Primitive organs. Those less complicated in the larva than in the imago; those about equally developed in larva and imago; and those wholly absent in imago.

(2) Organs rudimentary in both larva and imago.

(3) Organs inherited by the imago from the larva.

(4) Organs acquired by the larva independently of the imago, or which occupy a subordinate position in the imago. (Provisional organs of the first class.)

(5) Organs common to the larva and imago, but which follow a different course of development in each stage. (Provisional organs of the second class.)

(6) Primary organs, the development of which is retarded during the larval state.

Dr. Deegener points out that the larva is scarcely destitute of any organ present in the imago, whereas many organs present in the larva are wanting in the imago. Hence he concludes that the larva, as such, presupposes the pre-existence of the imago, and that the imago is phylogenetically older than the larva.

The origin of insects from lower forms is then discussed, and Dr. Deegener suggests that they have originated in a primitive Campodea-form, which has developed in one direction towards the imago and in another towards the larva. Other questions discussed are the various processes of metamorphosis, and the sexual relations of larvae.

We have rarely seen so small and unpretentious a book which contained so much matter of scientific importance, and it has been impossible for us to do more than direct attention to a few salient points in this brief notice.

W. F. K.